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Lessons Learned from and Recommendations for Sri Lanka's Ballast Labeling Program

Sri Lanka

Nexant

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List of Acronyms

CEB	Ceylon Electricity Board
CFL	compact fluorescent lamp
IIS	Import Inspection Scheme
NERD	National Engineering Research and Development Center
SARI/Energy	South Asia Regional Initiative on Energy
SLS	Sri Lanka Standard
SLSI	Sri Lanka Standards Institute
USAID	United States Agency for International Development
WB	World Bank

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Executive Summary

The Study Team visited Colombo during 5-6 May in order to assess lessons learned from energy efficiency programs in Sri Lanka. The purpose of the mission was to learn the lessons from the Sri Lanka experience with energy labeling of ballasts and CFLs and to share this experience with Nepali stakeholders.

CEB's ballast labeling program started in 2000. CEB is a large purchaser of ballasts, and in May 2001 CEB issued a circular[1] requiring that ballasts purchased by CEB should have a minimum of a 3-star rating as specified in SLS 1200: 1999. In 2001, CEB sent out individual letters to its largest customers – approximately 5,000 customers with transformers larger than 42 kVa. Yet despite the CEB promotion, it appears that the labeling program has not resulted in a significant increase in sales of low-lost ballasts in Sri Lanka.

There are 2 main problems with the program: (a) lack of coordination between the Import Inspection Scheme and the CEB Star Labeling Program and (b) prevalence of fake ballast products in the market.

The solution to the problem is to have a mandatory labeling program for ballasts and to integrate this with the Import Inspection Scheme. The end result would be a single, integrated certification requirement for quality and energy performance of ballasts. The integrated process would make it easier for CEB to take measures to deal with the problem of fake ballasts in the market.

[1] General Manager's Circular No. 2001/GM/6/DSM, dated 30 May 2001.

Section 1 Background

The Study Team visited Colombo during 5-6 May in order to assess lessons learned from energy efficiency programs in Sri Lanka and share this knowledge with Nepali stakeholders developing a ballast labeling program for Nepal. The work is funded by USAID and carried out under the South Asia Regional Initiative – Energy, Task 8.9.1: Technical Assistance to the National Technical Committee on Energy Efficiency Setting of Standards and Labeling of End Use Appliances.

The purpose of the mission was to learn the lessons from the Sri Lanka experience with energy labeling of ballasts and CFLs; to share this experience with Nepali stakeholders; to assess the capabilities and needs of Sri Lankan companies and government institutions in developing a ballast program; to assess the potential for peer exchanges and knowledge transfer; and to gather initial market data and other input to support design of a ballast standards and labeling program.

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In 2001, CEB sent out individual letters to its largest customers – approximately 5,000 customers with transformers larger than 42 kVa. Yet despite the CEB promotion, it appears that the labeling program has not resulted in a significant increase in sales of low-lost ballasts in Sri Lanka.

The stakeholders we met with gave us slightly conflicting messages as to why this was the case. Some said that initially, the suppliers did not have enough of the low-loss ballasts in stock. One said that he had the low-loss ballasts in stock, but could not sell them due to lack of customer demand.

[2] General Manager's Circular No. 2001/GM/6/DSM, dated 30 May 2001.

Ballast watt loss is tested at the testing laboratories at Moratuwa University and the National Engineering Research and Development Center (NERD), as well as at an SLSI test lab. According to CEB, there is no local test facility for measuring performance of electronic ballasts.

Ballast labeling criteria are laid out in the Sri Lanka standard SLS 1200. Tables 3.1 and 3.2 show the label steps for 18/20W and 36/40W ballasts, respectively.

Table 3-1: Star Ratings for Ballasts Used for 18/20W Fluorescent Lamps

Percent Active Power Loss	Active Power Loss	Star Rating
$P_{\%} \leq 20$	≤ 4	* * * * *
$20 < P_{\%} \leq 25$	$4 < P \leq 5$	* * * *
$25 < P_{\%} \leq 30$	$5 < P \leq 6$	* * *
$30 < P_{\%} \leq 35$	$6 < P \leq 7$	* *
$35 < P_{\%} \leq 45$	$7 < P \leq 9$	*
$45 < P_{\%}$	$9 < P$	No Star

$P_{\%}$ = Percentage active power loss in ballast; P = Active power loss in ballast in watts
Additional note: The standard notes that "all electronic ballasts that conform to recognized international standards (IEC 928 and 929) shall be labelled with ' * * * * * ' (five star) rating."
Source: SLS 1200: 2001

Table 3-2: Star Ratings for Ballasts Used for 36/40W Fluorescent Lamps

Percent Active Power Loss	Active Power Loss	Star Rating
$P_{\%} \leq 10$	≤ 4	* * * * *
$10 < P_{\%} \leq 15$	$4 < P \leq 6$	* * * *
$15 < P_{\%} \leq 20$	$6 < P \leq 8$	* * *
$20 < P_{\%} \leq 25$	$8 < P \leq 10$	* *
$25 < P_{\%} \leq 30$	$10 < P \leq 12$	*
$30 < P_{\%}$	$12 < P$	No Star

$P_{\%}$ = Percentage active power loss in ballast; P = Active power loss in ballast in watts
Additional note: The standard notes that "all electronic ballasts that conform to recognized international standards (IEC 928 and 929) shall be labelled with ' * * * * * ' (five star) rating."
Source: SLS 1200: 2001

Section 4 Import Inspection Scheme

Regular inspection of ballasts is supposed to take place under the Import Inspection Scheme (IIS). If an importer has a test certificate from the country of origin, the process takes about one day. In the case of small quantities, where there is not a test certificate from the country of origin, the importer has to provide samples (N = 11) to SLSI, and the process takes about 2 weeks. One of the problems with this set-up appears to be that SLSI insists on separate tests for each batch of consignment. The Philips importer said that Philips will not provide this service, which means that it causes an extra burden for the Philips importer to get their ballasts labelled, since they would have to pay an extra fee to test samples from each consignment. The other importers with whom we met said they had the same problem.

Table 4.1 shows the parallel and overlapping schemes in place for testing of ballasts in Sri Lanka. While in theory the tests required for importing a ballast, and for labeling the ballast are the same, in practice the schemes are operated entirely independently, without specific coordination.

Table 4-1: Comparison of SLSI's Import Inspection Scheme and CEB's Ballast Labeling Program

	Import Inspection Scheme	Star Labeling Program for Ballasts
Implementing Agency	**SLSI**	**CEB**
Main characteristics	All importers of ballasts must either (a) show test certificate from country of origin or (b) have samples (N=11) taken to SLSI for testing	Voluntary labeling scheme is being utilized by 5 importers representing a small share of the total ballast market.
Testing Standard used	IEC 968 for safety and IEC 969 for performance	IEC 969
Barriers	SLSI does not accept results from CEB Star Labeling. This causes *double testing* for importers who want to participate in the program	Manufacturers do not participate in labeling program because double testing (once for IIS and once for Star Labeling Program) is too much hassle.
Results	For approximately **60%** of ballasts, no papers given to SLSI (i.e. they bypass the IIS altogether)	In practice, due to the barriers mentioned above, only about **12%** of total ballasts sales (for good products) are labelled.

The SLS general and safety standard for ballasts (SLS 1150) has no requirement that the ballast be stamped with an SLSI mark. As a result, it is very difficult to check ballasts in the market place, after they have passed through customs, to determine if they have met the SLS standard.

The stakeholders with whom we met estimated that approximately **60%** of the ballasts imported into Sri Lanka are signed off by Customs without actually being tested by SLSI, as required under the SLS 1150 standard. The absence of a "mark" for ballasts makes it very difficult to police this after the ballasts have entered the country.

Data supplied by CEB indicate that approximately 1.2 million ballasts were imported into Sri Lanka in 2002. Currently, 5 ballast importers are certified to participate in the ballast labeling scheme, and the importers estimated that their collective imports account for about 200,000 of ballast sales. CEB estimates that about 150,000 ballasts (approximately **13%**) are of reasonably good quality – "star quality." The Study Team was unable to verify the detailed breakdown of sales by efficiency level, but received a table of imports from CEB which indicates which brands and models are of "star quality" – presumably 2 stars or better (< 7 watts losses).

Section 6 Problems with the Program

There are 2 main problems with the program: (a) lack of coordination between the Import Inspection Scheme and the CEB Star Labeling Program and (b) prevalence of fake ballast products in the market.

6.1 Double Testing: Lack of Coordination between the Two Testing Schemes

The main problem is that SLSI does not accept the results of the CEB star label certification. This means that an importer will have to get a product tested and certified 2 times: once for the IIS and once for the CEB star labeling program. The Philips importer, who said he was initially very enthusiastic about the program, said that after labeling an initial shipment of 13,000 ballasts, they have stopped labeling their ballasts because of the hassle.

6.2 Prevalance of Fake Ballast Products in the Market

A major problem with the ballast labeling program has been the proliferation of fake energy labels. According to the suppliers we met with, the market is flooded with low-priced, low-quality ballasts from East Asia (i.e. Mainland China, Taiwan, Hong Kong).

The suppliers estimated that ballast sales for 2002 were approximately 1.1 million. Of these, approximately 200,000 are sold by the 5 manufacturers that are participating in the ballast labeling program.

What happens in practice is that local companies import cheap ballasts and place fake labels on them. One of the importers with whom we met said that he has 45,000 of its ballasts in a warehouse, but it cannot sell them because of fakes on the market that are selling for a fraction of the price. There are major barriers to enforcement of fraud, including lack of a clear mandate for agency to aggressively pursue this, and a trivial fine of only 500 rupees per case (i.e. even if you are selling 5,000 fake ballasts, the fine would only be 500 rupees). Another barrier is that the cost of bringing a case for fraud in the court system is Rs. 400,000.

Section 7 Recommended Actions

The solution to the problem is to have a mandatory labeling program for ballasts and to integrate this with the Import Inspection Scheme. We recommend that the following steps be taken. They could be achieved within a time frame of approximately 6-12 month.

- Stakeholder meetings to agree on a mandatory labeling program for ballasts
- Letter from the Chairman of CEB to the Director of the Customs Department to request cooperation on enforcement of the labeling scheme at the point of Customs entry
- Drafting and passing of an Act by Parliament to make the labeling scheme for ballasts mandatory
- The test certification required for the ballast labeling program could also be used to allow import of the ballasts. The end result would be a single, integrated certification requirement for quality and energy performance of ballasts. The integrated certification process for all ballasts would also make it easier for CEB to take measures to deal with the problem of fake ballasts in the market.